

# Community Identification in Peer-to-Peer Collaborative Consumption Services

Master Thesis

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**Abstract**

Even though collaborative consumption (CC) is gaining economic importance, research in CC is still in its infancy. Consumers' reasons for participating have already been investigated but little research on consequences of participation has been conducted. This article examines whether interactions between customers in peer-to-peer CC services influence the willingness to coproduce service outcomes. Drawing on social exchange theory, it is proposed that this effect is mediated by consumers' identification with the brand community. Furthermore, continuance intention in CC is introduced as a second stage moderator. In a cross-sectional study, customers of peer-to-peer accommodation sharing are surveyed. While customer-to-customer interactions were found to have a positive effect on brand community identification, brand community identification did not positively affect co-production intention. Surprisingly, the effect of brand community identification on co-production intention was negative. Moreover, continuance intention of customers did not moderate this relationship. Bearing in mind current challenges for researchers and companies, theoretical and managerial implications are discussed.

**Keywords:** collaborative consumption, peer-to-peer, customer-to-customer interactions, brand community, co-production

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## 1 Introduction

This chapter aims at giving an introduction into collaborative consumption and provides an overview of the scope of this article. Chapter 1.1 provides contextual information on the sharing economy, whereas in chapter 1.2 predominant consumption modes are elaborated. In chapter 1.3, collaborative consumption is defined and allocated in the sharing economy. In doing so, collaborative consumption is divided into company-owned collaborative consumption and peer-to-peer collaborative consumption. Subsequently, in order to derive the research question, consequences of collaborative consumption on consumers are elaborated (chapter 1.4). Narrowing down the research question, a specific academic knowledge gap in peer-to-peer collaborative consumption is shed light on in chapter 1.5. Finally, this chapter presents the methodical approach, highlights academic and managerial contributions (chapter 1.6) and outlines the further structure of the article (chapter 1.7).

### 1.1 The Sharing Economy

Alternative consumption methods which differ from the transfer of ownership of goods are on the rise. Embedded in different business models, especially the sharing of goods is becoming more and more popular due to two reasons: On the one hand, the rise of the Web 2.0 facilitated the evolution of these business models, enabling new connections among consumers and disrupting whole industries such as hospitality, mobility, or banking sector – among others (Belk, 2014a). On the other hand, in the economic crisis in 2008 people were rethinking their values and consumption behaviour due to financial loss (Bardhi & Eckhardt, 2012, pp. 883–884). The *sharing economy* was already \$100 billion heavy in 2010 (Lamberton & Rose, 2012) – but is considerably more today: Singularly Uber, a company which offers a marketplace for private chauffeurs and their customers in urban areas, is currently worth more than \$50 billion (Macmillan & Demos, 2015). Moreover, revenues are predicted to surge from \$15 billion in 2013 to \$325 billion in 2025, increasing twentyfold and stealing high market shares from well-established industries (PricewaterhouseCoopers, 2015). Although research interest in the sharing economy has been grown steadily, the term is not clearly defined, too broad, and abstract since it currently includes different ventures in different industries: Companies ranging from non-profit ventures such as BeWelcome, where consumers can voluntarily share out a bed at their home to strangers, via for-profit car sharing ventures such as Zipcar, where consumers can rent out company-owned cars on demand, to crowdfunding platforms, where individuals can become investors and jointly fund companies or projects.

## 1.2 Consumption Modes in the Sharing Economy

One research field in the sharing economy stems from consumer behaviour and investigates reasons for participating in the sharing economy and the behaviour of consumers inside these ventures. In the latter, particular attention is paid to predominant modes of consumption. Drawing from knowledge in consumer research from both the traditional economy and non-economic settings, the relevance of the predominant consumption modes market exchange, gift giving, and sharing is investigated in the context of the sharing economy. Belk (2010) describes marketplace exchange as transactions in an economic context which are high on egoism, stinginess, impersonality, and reciprocity. In particular, goods or services and money are exchanged simultaneously with both parties having balanced (tit-for-tat) or negative (each party is maximising its own output) reciprocal expectations (Belk, 2007). Putting these characteristics into the context of a prototype, Belk (2010) mentions the example of “buying bread in a store” (p. 718). In comparison, gift giving is less egoistic, stingy, and impersonal than marketplace exchange (Belk, 2007). Reciprocal expectations are prevalent, but tacit and do not occur simultaneously: After giving a gift, one party of the dyadic relationship is in debt of returning the favour every time (Belk, 2007). According to Giesler (2006), gift giving in a consumption context is prevalent in consumer gift systems – for example in the peer-to-peer music file sharing program Napster. As a prototype, Belk (2010) mentions the famous short story “The Gift of the Magi”, in which a man and a woman in love both sacrifice favourite belongings in order to make each other gifts. Sharing could be defined as “the act and process of distributing what is ours to others for their use as well as the act and process of receiving something from others for our use” (Belk, 2007, p. 127). Sharing is high on altruism, generosity, and personality, and does not involve any reciprocal expectations (Belk, 2007; Belk, 2010). A prototype are pooled resources in households (Belk, 2007): In families, income of parents is shared and reallocated among family members without direct reciprocity. Inside sharing, Belk (2010) classifies sharing practices either as sharing in or sharing out. This author defines sharing in as sharing executed by including others within the aggregate extended self, whereas sharing out implies sharing with clear boundaries between self and others. Simply put, sharing in is closer to sharing within the family or circle of friends for the expression of community, whereas sharing out is closer to gift giving and commodity exchange (Belk, 2010, p. 725).

For the sharing economy in particular, there is good reason to believe that this categorisation of consumption modes is not sufficient. Besides regular consumption modes, situations exist in which these modes occur simultaneously and boundaries among them are blurred. Scaraboto (2015) describes this as *hybrid modes of exchange*. Many business models in the sharing economy

imply these hybrid forms through being monetary incentivised but having internalised aspects of gift giving and sharing as well: examples are the freemium payment model of music streaming provider Spotify or the donation-based financing model of Wikipedia.

### 1.3 Collaborative Consumption

One predominant hybrid mode of exchange is *collaborative consumption* (CC) which depicts the central aspect of investigation of this report. Originally defined as a broad range of events involving the joint consumption of economic goods or services, including events such as telephone calls and watching football games together (Felson & Speath, 1978), the meaning changed due to the rise of the Internet and increased possibilities of collaboration. Today, CC means “people coordinating the acquisition and distribution of a resource for a fee or other compensation” (Belk, 2014b, p.1597) and gained prominence through companies especially in the hospitality and mobility sector such as Airbnb or Zipcar. With this definition, Belk (2014b) separates CC from gift giving or sharing practices without compensation and from practices not involving acquisition and distribution of resources. Since CC activities differ from conservative business models involving ownership and their expansion is rapid and might disrupt lots of industries (Lamberton & Rose, 2012), it is crucial to understand them and their implications for consumers.

As there exists semantic confusion in the literature on CC, the following paragraphs elaborate differences and similarities between CC and related constructs. Terms which are semantically close –but not congruent– to CC are pseudo-sharing and access-based consumption. First, pseudo-sharing is a phenomenon where commodity exchange and exploitation of consumers is marketed in the guise of sharing (Belk, 2014a). Calling them pseudo-sharing business models (Belk, 2014a), short-term rental offers such as vacation rental (Airbnb) or car sharing (Zipcar) make up the economically most important part of CC ventures. Based on Bardhi and Eckhardt’s (2012) findings at Zipcar, Belk (2014a) argues that pseudo-sharing activities do not involve sharing at all and are characterised by (a) profit motives, (b) the absence of community feeling, and (c) expectations of reciprocity. Second, access-based consumption means “transactions that may be market mediated in which no transfer of ownership takes place” (Bardhi & Eckhardt, 2012, p.881). It includes both for-profit (market mediated) settings in which goods or services are consumed collaboratively for a fee and non-profit settings in which consumers share goods without monetary incentives. Additionally, access may differ from sharing in that it is not altruistic or prosocial necessarily (Belk, 2010) but can be underlined by economic exchange and reciprocity (Bardhi & Eckhardt, 2012, p. 882).

Hamari, Sjöklint, and Ukkonen (2015) categorise CC of goods and services into transfer of ownership and access over ownership. In transfer of ownership, ownership is carried over between consumers, resulting in CC in form of swapping, donating, or purchasing used goods (Hamari et al., 2015). In access over ownership, goods and services are exchanged through short-term renting and lending activities. In contrast to renting, lending does not involve monetary transactions (Hamari et al., 2015). These categories of CC suggested by Hamari et al. (2015) cause semantic confusion in two ways: First, by referring to Bardhi and Eckhardt (2012), but contrary to their definition, Hamari et al. (2015) point out that access over ownership necessarily involves *peer-to-peer exchange* (customers exchanging goods or services in a network setting) of goods or services. Yet, Hamari et al. (2015) mention examples in car sharing which only include *company-customer exchange* (companies provide access for goods or services to customers). Second, Belk's (2014b) definition of CC differs from the one of Hamari et al. (2015) concerning the compensational aspect. By only considering exchange incentivised by monetary or non-monetary compensation, the access over ownership subcategory lending and the transfer of ownership subcategory donating are not included. Since swapping "involve[s] giving and receiving non-monetary compensation" (Belk, 2014b, p.1597), both Hamari et al. (2015) and Belk (2014b) consider this exchange type as part of CC. Therefore, this report defines CC different than Hamari et al. (2015) by (a) including both peer-to-peer exchange and company-customer exchange and (b) considering only exchange incentivised by monetary or non-monetary compensation.

#### **1.4 Collaborative Consumption Types and Their Implications for Consumers**

Inherently, due to the early research state of CC, a lot of studies painted all CC ventures and their customers with the same brush. However, more recent studies aim at providing typologies of CC ventures (Bardhi & Eckhardt, 2012; Belk, 2014a; Hamari, Sjöklint, & Ukkonen, 2015; Lamberton & Rose, 2012; Scaraboto, 2015) and investigate differences among them (Philip, Ozanne, & Ballantine, 2015; Shaheen, Mallery, & Kingsley, 2012; Willer, Flynn, & Zak, 2012). A factor differentiating CC business models is the ownership of goods or services. Goods or services can either be company-owned (*company-owned CC*) or privately owned with people renting out their belongings or services to other customers in a peer-to-peer network setting (*peer-to-peer CC*). Prominent examples of company-owned CC ventures are car (Drivenow, Zipcar, Car2Go) or bike sharing (NextBike, Call a Bike) companies which provide fleets of vehicles per city or region. Peer-to-peer CC ventures are prevalent in many industries such as hospitality (Airbnb, HomeAway,

Wimdu), peer-to-peer car sharing (Drivy, Turo, Carhood), or services such as cleaning (Helping) or dog sitting (DogVacay).

Bardhi and Eckhardt (2012) develop six dimensions of classifying access-based consumption ventures and test their effect on customers. Although aiming at access-based consumption in general, these dimensions can be applied in the context of CC since CC is a subgroup of access-based consumption. Identified dimensions are (a) temporality of access, (b) personal anonymity of customers and spatial anonymity of goods or services in the process, (c) market mediation, (d) consumer involvement, (e) type of accessed object, and (f) political consumerism (Bardhi & Eckhardt, 2012). Since CC ventures are for-profit, market mediation can be excluded for CC. Catulli et al. (2013) build on these findings by replicating the study for collaborative consumed baby and nursery products, partially confirming the dimensions. Applying the dimensions of Bardhi and Eckhardt (2012) in the context of company-owned CC and peer-to-peer CC, mainly anonymity and consumer involvement differ between both types, since customers interact and get know each other in peer-to-peer CC.

Conducting in-depth interviews with car sharing customers in a company-owned CC context, Bardhi and Eckhardt (2012) found customers lacking of identification with brand and other customers and a reluctance to co-produce service outcomes such as filling gas tanks or cleaning the car after usage – resulting in the necessity of top-down rules and forcing customers to behave accordingly. In particular, users of Zipcar did not feel attached to other users, avoided identification with them, and appreciated rules and monitoring from Zipcar due to acknowledgement of their own lack of compliance without rules (Bardhi & Eckhardt, 2012). Drawing a selfish picture of car sharing customers, Bardhi and Eckhardt (2012) believe their findings to challenge “the pre-existing romanticized view” (p. 894) on CC. Criticising this generalisation, some scholars claim that the small and inaccurate sample as well as the exploratory nature of the study do not allow for this conclusion which increases the need for a more differentiated view on car sharing (Belk, 2014a; Gorenflo, 2012).

Surprisingly, Philip et al. (2015) replicated the study of Bardhi and Eckhardt in a peer-to-peer CC context and found customers with higher identification with the user community, a high degree of co-production intention, high political consumerism, and fear of negative reciprocity in case of misbehaviour.

## 1.5 Problem Statement and Research Question

Although academic interest in CC is increasing, a lot of research focuses on exploration of CC practices or reasons for participation in it. Yet, there is little research on effects of CC ventures on consumer behaviour or vice versa. Following the prior ideas, it is the purpose of this paper to contribute to a deeper understanding of how brand community identification is shaped in peer-to-peer CC ventures and to what extent customers are willing to co-produce service outcomes.

In order to specify this question and put it into a measurable context, two further constructs are considered. First, one factor differentiating company-owned CC and peer-to-peer CC are customers interacting with each other. In company-owned CC, customers do not have to interact necessarily and thus anonymity is higher than in peer-to-peer settings, where customers have to communicate in order to organise the rental activity. Therefore, this article investigates the role of physical customer-to-customer interactions in peer-to-peer CC concerning customers' communal identification and the intention to co-produce service outcomes. Second, this article draws its theoretical arguments from social exchange theory which predicts behaviour of individuals according to the future value they derive from relationships (Blau, 1964). This raises the question if customers in peer-to-peer CC translate their community feelings into behaviour only if they can derive future value from it.

Although there is research on factors facilitating brand communities and value co-creation, business model characteristics of CC ventures and its implications on customers have not been taken into account so far. While there exists knowledge concerning the difference of brand community identification in sharing and pseudo-sharing ventures (Willer et al., 2012), little research has focused on peer-to-peer CC.

Given all these considerations leads to the following research question:

Do customer-to-customer interactions in peer-to-peer collaborative consumption influence customers' perceived belonging to a brand community and subsequently the intention to co-produce service outcomes?

In order to be able to provide an answer to this question of main interest it can be split into four subquestions:

- Do customer-to-customer interactions in peer-to-peer collaborative consumption positively relate to the intention to co-produce service outcomes?
- Do customer-to-customer interactions in peer-to-peer collaborative consumption positively relate to customers' brand community identification?

- Does customers' brand community identification positively relate to the intention to co-produce service outcomes?
- Is the relationship between brand community identification and co-production intention dependent on customers' future benefits derived from the service?

### **1.6 Purpose and Value of the Study**

This article develops a conceptual model and tests it in a cross-sectional study using survey data of peer-to-peer CC customers, which adds both academic and managerial value. First, even though many articles on CC and the sharing economy do exist, few articles with descriptive studies have been published. Most researchers conducted qualitative research in CC and explored the industry or specific mechanisms in it (Bardhi & Eckhardt, 2012; Shaheen, Mallery, & Kingsley, 2012). Moreover, focusing on a specific aspect of findings of Bardhi and Eckhardt (2012) and Philip et al. (2015) may encourage other scholars to research on other aspects in this context in order to generate a holistic image of the phenomenon. Therefore, validating one aspect of their work by putting some findings in a measurable context contributes to the understanding of CC.

Second, findings of this study may also assist managers in CC ventures concerning business model choice and the management of co-production of service outputs. By being able to assess customer's feeling of belonging to a brand community and their subsequent willingness to co-produce service outputs according to business model characteristics, managers are able to anticipate possible expenses or savings on monitoring customers and enforcing rules in peer-to-peer CC ventures.

### **1.7 Structure of the Study**

The article is organised as follows. Chapter 1 gives an overview of collaborative consumption and its positioning within the sharing economy. In chapter 2, this article provides a conceptual model. Drawing on social exchange theory and a literature review, variables are connected and hypotheses are derived. In chapter 3, the methodical approach is elaborated and a brief outline of the analytical strategy is provided. Chapter 4 presents the results of statistical analyses. Survey data is analysed with uni- and bivariate techniques. Afterwards, hypotheses are tested with a multiple linear regression analysis and results are presented. Finally, this report ends with a concluding section in chapter 5, discussing results and implications of this study and providing an outlook of future research by mentioning limitations.

## **2 Communal Identification in Peer-to-Peer Collaborative Consumption**

After having introduced the context of this study and its research question, in this chapter hypotheses are developed on basis of social exchange theory and a literature review, leading to the evolution of a conceptual research model (see **Figure 1**). Chapter 2.1 provides a brief overview of social exchange theory. Then, customer-to-customer interactions and co-production intention are introduced, linked, and applied in the context of CC (chapter 2.2). In order to clarify the construct brand community identification, chapter 2.3 elaborates research on brand communities and derives its connection to customer-to-customer interactions. In chapter 2.4, co-production intention and its characteristics are explained and brand community identification is presented as an antecedent. Then, completing the linkages in the conceptual model, the moderating role of continuance intention of customers is introduced in chapter 2.5. Finally, chapter 2.6 provides a brief summary.

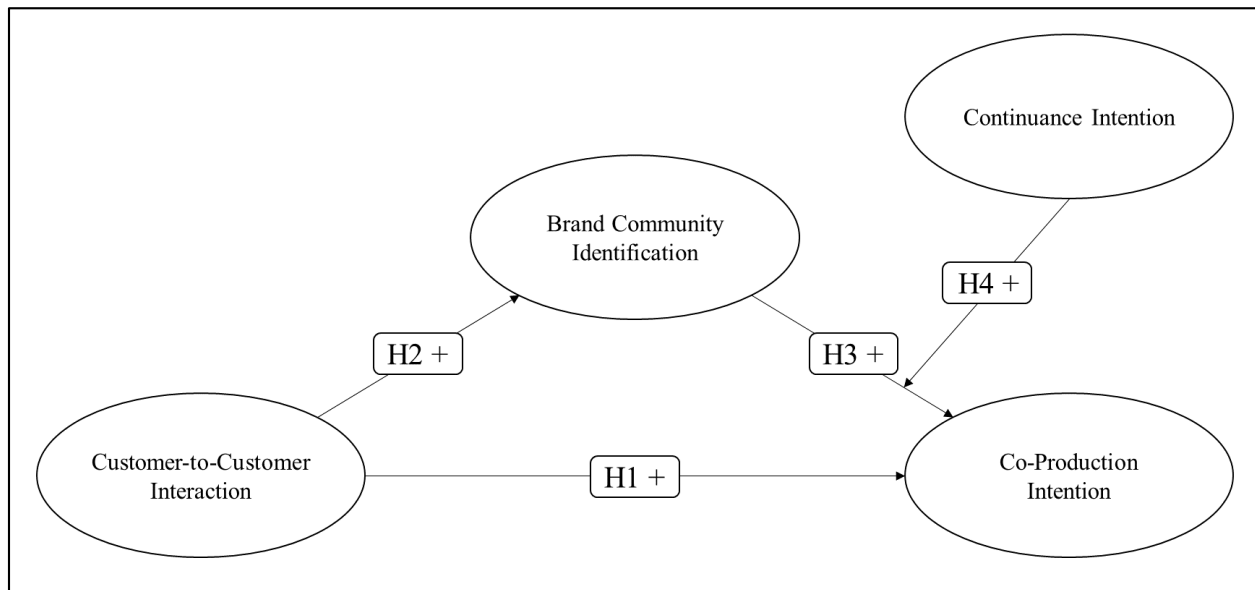
### **2.1 Social Exchange Theory**

This report defines interactions from a social exchange perspective. Social exchange theory implies a process in which transactions between two parties of exchange lead to certain outcomes. According to social exchange theory, individuals consider relationships by subjectively comparing its rewards and costs (Blau, 1964; Emerson, 1976). The result of this comparison determines positive or negative assessment of the relationship, leading to (positively or negatively) social behaviour. Therefore, interactions between two parties have behavioural implications for both parties (Cropanzano & Mitchell, 2005).

Social exchange theory is mainly characterised by two categories of exchange. First, reciprocal interdependence is a central characteristic of social exchange theory (Cropanzano & Mitchell, 2005), meaning that outcomes are generated by a combination of inputs or transactions of both parties which both benefit from these outcomes (Gouldner, 1960). Due to this interdependence, reciprocity as a norm is a central category of exchange in social exchange theory (Cropanzano & Mitchell, 2005). Second, besides reciprocity, both parties exchange due to negotiated rules which do not stem from reciprocal motivations (Cropanzano & Mitchell, 2005). Reciprocal exchanges lead to stronger interpersonal bonds than exchanges on basis of negotiated rules (Cropanzano & Mitchell, 2005; Molm, 2003).

Theorists in social exchange theory are divided over relational benefits being either the resource or result of exchange. Molm (2003) finds reciprocal exchanges to result in close relationships, whereas other researchers find exchange to be a result from relational benefits (Bishop, Scott, & Burroughs, 2000; Eisenberger, Armeli, Rexwinkel, Lynch, & Rhoades, 2001).

Cropanzano and Mitchell (2005) indicate a resolution of this problem by explaining that both perspectives may not contradict each other. They describe relationship development not as a "single stimulus-response", but "more analogous of climbing a ladder" (p. 890) with both process directions creating the outcome for each other iteratively.



**Figure 1:** *Conceptual Model*

## 2.2 Customer-to-Customer Interactions and Co-Production Intention

In this subchapter, first the concepts customer-to-customer interactions and co-production intention are explained. Then, on basis of both concepts, the conceptual model's direct effect in peer-to-peer CC is hypothesized.

### 2.2.1 Customer-to-Customer Interactions

In peer-to-peer CC ventures, customers interact physically and/or via the Internet, scheduling and conducting the rental activity and rating each other afterwards. Evidence suggests that physically close interactions benefit the formed relationship's quality (Kirkman, Rosen, Tesluk, & Gibson, 2004). Moreover, Huang and Hsu (2010) underscore that it is the quality rather than the quantity of dyadic interactions that determines outcomes. Due to these more promising results for the quality of interaction in physically close situations and in order to maximise the hypothesised effect, this article considers face-to-face interactions in peer-to-peer CC settings. Face-to-face interactions among customers have been investigated in the literature on customer-to-customer interactions and can be defined as "direct interactions between customers taking place in physical service settings" (Nicholls, 2010, p.87).

One major field of academic interest has been the effect of customer-to-customer interactions on several dependent variables. Customer-to-customer interactions relate positively to

service experience and have indirect positive impact on customer satisfaction mediated by service experience (Huang & Hsu, 2010). Moreover, service atmospherics have been found to influence customer-to-customer interactions, and customer-to-customer interactions predict the perceived value of the service in terms of satisfaction and word-of-mouth intentions (Moore, Moore, & Capella, 2005). Another study found evidence for the importance of high sense of community on customers' sense of commitment and perceived quality in high customer-to-customer interaction service settings (Bunker, 2004).

### **2.2.2 Co-Production Intention**

Customers are more and more seen as endogenous actors for companies, being capable of co-creating value with and for the company. Several research streams in marketing literature have begun to see customers as important parts in value creation. Examples are relationship marketing (Vivek, Beatty, & Morgan, 2012) and consumer culture theory (Arnould & Thompson, 2005), but most prominent, service-dominant logic (Vargo & Lusch, 2004) has declared co-creation as a central principle. Service-dominant logic is a well-known perspective which focuses on intangible resources, co-creation of value and relationships and challenges the predominant goods-centric point of view (Vargo & Lusch, 2004) by viewing goods only as “vehicles for the provision of services” (Edvardsson, Tronvoll, & Gruber, 2011, p.327). According to service-dominant logic, since companies cannot create value alone, “the customer is always a co-creator of value” (Vargo, Maglio, & Akaka, 2008, p.148).

One specific type of value co-creation is co-production of service outcomes. Co-production is “constructive customer participation in the service creation and delivery process” and requires “meaningful, cooperative contributions to the service process” (Auh, Bell, McLeod, & Shih, 2007, p. 361). Due to semantic confusion in the literature, it has to be distinguished from customer co-production in the production process which means customisation of products (Etgar, 2008) and which is not considered in this article. On the one hand, without co-production of the customer, the intended service experience is not achieved. On the other hand, studies have found co-production to enhance customer satisfaction (Cova & Dalli, 2009; Norton, Mochon, & Ariely, 2012). Co-production behaviour needs to be differentiated from citizenship behaviour which is more voluntarily and beyond customer role expectations (Groth, 2005; Ho, 2015). For example, co-production in car sharing ventures implies filling gas tanks, reporting damages, or leaving the car clean. In this context, citizenship behaviour includes for example word-of-mouth activities, helping novices in the community, or providing feedback to the company. The meaning of both concepts can be clarified by comparing them to their counterparts in organisational research: Co-production

is comparable to employee task performance, whereas customer citizenship behaviour is comparable to organisational citizenship behaviour (Groth, 2005). Given all these considerations, co-production seems to offer benefits for both customer and company but is no guarantor for success.

### **2.2.3 Customer-to-Customer Interactions and Co-Production Intention in CC**

Some studies on effects of negative customer experience have shed light on misbehaviour in co-production in CC. Schaefers, Wittkowski, Benoit, and Ferraro (2016) found that in CC, anonymity of the owner of the good or service (which is high in company-owned CC and low in peer-to-peer CC) positively relates to misbehaviour intentions. This suggests that co-production intention is higher in peer-to-peer CC settings. Moreover, customers make companies responsible for other customers' misbehaviour in co-producing service outcomes if they consider the firm to be accountable – the more severe customers misbehave, the more other customers are unsatisfied (Huang, 2008). Other customers evaluate services not only according to compliance of other customers but also according to problem-solving skills of employees (Huang, 2008).

Applying social exchange theory and knowledge on customer-to-customer interactions to CC, interactions between two parties in CC ventures can be considered as transactions according to the definition in social exchange theory. In particular, in peer-to-peer CC ventures exchange necessarily happens in dyadic settings between consumers (peer-to-peer exchange) which have to organise the short-term rental. Therefore, social exchange theory can be applied from the customers' perspective. Moreover, customer-to-customer interactions in peer-to-peer CC ventures seem to depict a point of difference in comparison to company-owned CC ventures, in which anonymity of customers is higher. Therefore, questioning the external validity of the findings on co-production intention in car sharing (Bardhi & Eckhardt, 2012), and reinforced through contrary findings for peer-to-peer CC ventures (Philip et al., 2015), this article hypothesizes that the quality of exchange between peers produces socioemotional value. If members perceive these benefits to outweigh costs from participating in peer-to-peer CC, they subsequently invest in the community, for example in form of co-production.

**H1:** Customer-to-customer interactions in peer-to-peer collaborative consumption services positively relate to customers' co-production intention.

### **2.3 Customer-to-Customer Interactions and Brand Community Identification**

In this subchapter, first the concept of brand community is explained. Second, brand community identification is linked to customer-to-customer interactions in peer-to-peer CC.

#### **2.3.1 Brand Communities**

Muniz and O'Guinn (2001) define a brand community as "a specialized, non-geographically bound community, based on a structured set of social relations among admirers of a brand" (p. 412). Brand communities consist of loyal customers which are actively interested in brand and community and are characterised by conscious of a kind, shared rituals and traditions, and a sense of moral responsibility (Muniz & O'Guinn, 2001). Also, brand communities bear a high potential of cost savings and revenue boosts since loyal customers buy more and engage in company promotion voluntarily (Fournier & Lee, 2009). Due to its effect on customer loyalty, "brand community membership is more useful as a customer retention device than as a customer acquisition tool" (Algesheimer, Dholakia, & Herrmann, 2005, p. 30). A prominent example underscoring the strength of brand communities is the case of Harley-Davidson: After being financially unsound in the 1980s, the company was able to avert bankruptcy mainly due to brand community building practices (Fournier & Lee, 2009; Schouten & McAlexander, 1995) which helped Harley-Davidson to be worth over \$13 billion today (Forbes, 2015).

Mainly allocated in the field of relationship marketing, research in brand communities has grown and developed steadily. One important field in brand community research aims at understanding brand community identification and its antecedents. Brand community identification is a concept akin to customer loyalty and describes the identification with the brand as aggregated experience of consumers with brand, product, company, and other consumers (McAlexander, Schouten, & Koenig, 2002). Most of the research is focusing on brand communities for goods exchanged on the marketplace in which identification of brand admirers is fostered either offline (Muniz & O'Guinn, 2001; Schouten & McAlexander, 1995) or in online brand communities (Brodie, Ilic, Juric, & Hollebeek, 2013; Healy & McDonagh, 2013; Ho, 2015; Jang, Olfman, Ko, Koh, & Kim, 2008; Lee, Kim, & Kim, 2011; Madupu & Cooley, 2010; Pongsakornrunsilp & Schroeder, 2011).

#### **2.3.2 Brand Community Identification in CC**

Brand community identification is the intensity of which consumers identify with the community of the brand (Algesheimer et al., 2005). Similar constructs to brand community identification are brand community affect which means a positive emotional response to relationships with customers (Hur, Ahn, & Kim, 2011) or sense of community (Carlson, Suter, & Brown, 2008; Talò, Mannarini,

& Rochira, 2014), although the latter goes one step further by arguing that it is a result of community identification. Ho (2015) highlights the importance of frequent and qualitative community exchange as an antecedent of identification with company and other consumers.

Different studies of communal identification for different consumption styles exist. Willer et al. (2012) investigated community identification in one sharing and one pseudo-sharing peer-to-peer venture. Just taking into account users who benefited from each venture, users of the sharing venture reported a higher degree of group identification (Willer et al., 2012). Out of this, Belk (2014a) interprets this finding as a proof for his hypothesis that consumers in pseudo-sharing ventures are lower in community feeling than in real sharing ventures. For CC in particular, there is contrary evidence from in-depth interviews: One study finds members lacking of communal identification (Bardhi & Eckhardt, 2012) but another one finds support for it (Philip et al., 2015). Since the first study was conducted with customers of company-owned car sharing and the latter with customers of peer-to-peer car sharing, there might be variance inside CC.

The degree of information exchange among community members and between community host and community members was found to influence community commitment significantly (Jang et al., 2008). Moreover, Ho (2015) finds evidence for a positive relationship between information exchange in the community and communal identification of members. Offline activities are found to benefit this relationship stronger than web-based activities by the company (Stokburger-Sauer, 2010). Social exchange theory can give a possible explanation for these findings by claiming that frequent and meaningful exchange among customers produces socioemotional value. According to social exchange theory, benefits derived from customer-to-customer interactions outweigh the cost of affective identification and subsequent commitment to the community for customers. As discussed, the application of the concept customer-to-customer interactions requires face-to-face communication. Since most peer-to-peer CC ventures provide these type of interactions, this premise is given and the following is hypothesized:

**H2:** Customer-to-customer interactions in peer-to-peer collaborative consumption services positively relate to customers' brand community identification.

#### **2.4 Brand Community Identification and Co-Production Intention**

This subchapter deduces the effect of brand community identification on co-production intention. First, research on consequences of brand community identification is elaborated. Then, both concepts are linked in the context of peer-to-peer CC.

### **2.4.1 Consequences of Brand Community Identification**

Another field of studies in brand community research focuses on consequences of brand community identification. Concepts resulting from identification with the community are mainly affective or behavioural positive consequences such as community engagement, customer citizenship behaviour, co-production, commitment, loyalty but also include negative consequences such as normative group pressure or reactance. By also proving high correlations between behavioural intentions and behaviour, Algesheimer et al. (2005) underscore the practical relevance of the phenomenon.

First, brand community identification leads to positive voluntary behaviour of customers. Community engagement describes customers' intrinsic motivation of interacting with community members and was found to be strongly connected to brand community identification (Algesheimer, Dholakia, & Herrmann, 2005; Schau, Muñiz, & Arnould, 2009). It can be cognitive, emotional, and behavioural and consists of several sub processes, for example socialising or co-developing (Brodie et al., 2013). Community engagement is a construct similar to organisational citizenship in the organisational literature, but from the consumer's and not employee's perspective. Therefore, it is also in line with the definition of customer citizenship (Groth, 2005), a construct which was developed on basis of organisational citizenship and validated in the context of communal identification (Carlson, Suter, & Brown, 2008; Ho, 2015). Second, community identification can lead to negative consequences as well. It can influence normative pressure in the community, leading to reactance to participate and mitigating positive behavioural intentions and behaviour (Algesheimer et al., 2005).

Other studies focus on affect, commitment and loyalty as consequences of brand community identification and have found positive relationships between them (Hur, Ahn, & Kim, 2011; Marzocchi, Morandin, & Bergami, 2013). Contrary to other studies, Füller, Matzler, and Hoppe (2008) found no relation between brand community identification and willingness to participate in open innovation projects. This leads to the conclusion that brand community identification is a necessary but not sufficient condition for the creation of commitment (Füller et al., 2008).

### **2.4.2 Brand Community Identification and Co-Production Intention in CC**

Not many articles have investigated customers' co-production intention in CC ventures in particular. Moreover, all studies differ in their results. Some scholars argue that business models in CC which involve monetary transactions between members or members and companies necessarily lead to low communal feeling and less altruistic behaviour of customers (Bardhi & Eckhardt, 2012; Belk, 2014a). Contrary, another study focusing on peer-to-peer CC only found a substantial degree of

communal feeling and subsequent co-production intention (Philip et al., 2015). Hamari et al. (2015) provide a third perspective in-between when suggesting on basis of their results that in CC a gap between attitude and behaviour might be present, meaning that customers actually have a positive attitude towards members and company but do not show it in their actual behaviour.

Schaefers et al. (2016) investigate the relationship from another perspective by investigating customer misbehaviour in car sharing ventures. Customer misbehaviour is behaviour which violates social norms in consumption situations (Fullerton & Punj, 2004; Schaefers et al., 2016). The results of Schaefers et al. (2016) suggest that communal identification of members mitigates misbehaviour intention and therefore benefits co-production intention (Schaefers et al., 2016). From a social exchange perspective, there are good reasons to believe in this. Value derived from community feeling of customers benefits the customer. However, since co-production effort directly benefits other customers in peer-to-peer CC, co-production can be seen as inevitable actions (costs) which are needed to sustain the relationship with the community and its members. Therefore, drawn from the literature on peer-to-peer CC (Philip, Ozanne, & Ballantine, 2015; Schaefers et al., 2016) and social exchange theory, it is hypothesized the following:

**H3:** Brand community identification in peer-to-peer collaborative consumption services positively relates to co-production intention.

## 2.5 Continuance Intention

This subchapter introduces continuance intention of the CC service as a second stage moderator. Continuance intention describes the customers' intention to continue using the CC service (Bhattacharjee, 2001). Studies have found perceived usefulness of the service offer and customer satisfaction to relate positively to continuance intention (Bhattacharjee, 2001; Chen, Chen, & Chen, 2009). Moreover, Wang and Chiang (2009) find social interactions to foster relationships within the brand community which is subsequently determining continuance intention.

Although widespread literature on continuance intention and its antecedents exists, predictors of continuance intention seem to differ by the underlying product or service and the perceived value for customers in particular. This article does not explain antecedents of continuance intention. Instead, it highlights its role in the model as a second stage moderator. Drawing on social exchange theory, customers continuously compare costs and rewards from relationships and decide to sustain or cancel these relationships according to alternative options (Blau, 1964; Cropanzano & Mitchell, 2005; Emerson, 1976). Therefore, it is argued that for customers with high service

continuance intention, perceive future rewards are higher and thus they are less likely to misbehave in order to sustain the positive relationship. The moderating role of continuance intention is a better fit between brand community identification and co-production intention than between customer-to-customer interactions and brand community identification, as the argument from social exchange theory was invalid for a first stage moderator. Social exchange theory considers the cost/benefit ratio derived from a relationship. In comparison to co-production behaviour, brand community identification cannot be considered as a real cost, as it an attitude and not a behaviour.

Hence, the following is hypothesized:

**H4:** Continuance intention in peer-to-peer collaborative consumption services positively moderates the effect of brand community identification on co-production intention.

## 2.6 Chapter Summary

On basis of the literature and arguments from social exchange theory, this chapter develops a conceptual model with hypothesized relationship among the constructs (compare **Figure 1**). **Table 1** sums up all hypotheses. In the next chapter, the study's research design and further methodical insights are illustrated.

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### Hypothesis

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#### Hypothesis 1

Customer-to-customer interactions positively relate to co-production intention.

#### Hypothesis 2

Customer-to-customer interactions positively relate to brand community identification.

#### Hypothesis 3

Brand community identification positively relates to co-production intention.

#### Hypothesis 4

Continuance intention positively moderates the effect of brand community identification on co-production intention.

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*Table 1: Hypotheses Overview*

### **3 Method**

After having derived hypotheses from the research question, in this chapter the research design of the conducted study is elaborated. Following a positivistic research approach, a quantitative, cross-sectional study using a web based survey was conducted. Chapter 3.1 provides contextual information on the methodical procedure. Afterwards, the data collection approach and sampling design is explained in chapter 3.2. Then, chapter 3.3 outlines measures of constructs and their sources. Finally, this chapter ends with a brief overview of the analytical strategy (chapter 3.4) and a brief intermediate summary (chapter 3.5).

#### **3.1 Context**

The main purpose of this study is to investigate if customer-to-customer interactions in peer-to-peer CC ventures shape customers' intention to co-produce service outcomes. Moreover, brand community identification is hypothesized to mediate, and continuance intention is hypothesized to moderate the effect. The study has to comply with temporal and monetary restrictions available for a usual master thesis. First, even though missing the opportunity of additional insights, it is beyond the scope of this study to test the hypotheses in a longitudinal setting due to the limited research timeframe available. Second, a web based study is advantageous over other methods such as interviews as it takes less effort to generate an adequate number of responses and is less costly. Since survey data is easier to gather and analyse than interview or observation data, researcher bias can be reduced as well. Given all these considerations, a quantitative, cross-sectional study using a web based survey was considered to be the most appropriate research design.

#### **3.2 Sample and Procedure**

The study's unit of analysis is the individual. The target population includes customers of peer-to-peer CC ventures. As peer-to-peer CC ventures are present in a broad variety of sectors, it is the purpose of the study to test the hypotheses with customers of different peer-to-peer CC ventures. Facing the trade-off between sample size in each venture and the number of different ventures, it was decided to pursue a sample in two prominent sectors: peer-to-peer CC of cars and accommodation. For cars and accommodation, goods are exchanged in form of peer-to-peer short-term rentals where customers meet personally. Moreover, customers in the Netherlands and Germany were targeted. The whole survey instrument was designed in English. Subsequently, it was translated into German and Dutch and checked by native speakers independently. As validated measurement scales from prior literature are used, solely the context and the collection sequence are new, and thus pilot testing was utilised only on a small scale by sending out the survey to five

persons and subsequently asking them about possible improvements. Afterwards, minor adjustments were taken. As data was gathered through two different data collection approaches, the next paragraph first describes these approaches before presenting the number of responses.

Survey links were distributed via the social network Facebook in two ways. First, private messages containing the survey link were distributed. Using Facebook graph search by searching for “people who like pages named ‘[VENTURE]’ living in [LOCATION]”, recipients were explicitly targeted by “liking” specific CC ventures and by their residence. In doing so, a sampling frame of 14613 people was found. By creating a new Facebook account for sending out the messages, bias in the sample was mitigated since Facebook otherwise ranks search results according to personalised data such as mutual friends. Semi-personalised messages were created, containing the recipients’ name and specifying the identified venture which they have liked on Facebook. Since liking a facebook page does not guarantee a recipient to be a customer of the company, all recipients were asked for their status as customers of the venture in the beginning of the survey. To increase the response rate and mitigate non-response bias, two actions were taken. Messages briefly described the researcher’s status as a student which discloses the sponsor and helps the request to not be considered as spam. Moreover, in order to increase the response rate, it was announced to raffle four coupons per ten Euros for an online shop among all respondents (Fowler Jr, 2013). 1835 messages were sent manually to recipients, of which 34 completed the survey. This low response rate of 1.85% is most probably caused by a Facebook algorithm which lets messages to strange (non-companioned) recipients only appear in their spam folder. Moreover, 21 further recipients indicated via Facebook message to only like and not to use the venture they were targeted for. Therefore, second, the survey distribution strategy was changed by posting the link to the survey in 15 Facebook groups of German and Dutch cities. Groups were selected by member size and purpose, ranging from 3000 to 140000 members and from startup-related groups to communal support groups. If applicable, group administrators were asked for approval. Following this approach lead to 278 responses. The response rate cannot be estimated due to unavailability of the number of recipients. Consolidating responses of both data collection methods resulted in 312 responses, of which 40 were not fully completed, leading to 272 completed responses. **Table 2** provides an overview of the ventures, sampling frame and customers contacted.

Venture Type and Name	Venture Information	Selected Customers	Population Identified	Customers Contacted
<b>Car sharing</b>				
Drivy	Operating in Europe	Customers in Germany	797	583
SnappCar	Operating mainly in the Netherlands	Customers in the Netherlands	3891	392
<b>Accommodation sharing</b>				
Airbnb	Operating worldwide	Customers in Germany and the Netherlands	8364	731
Wimdu	Operating worldwide	Customers in Germany	1561	129

**Table 2:** Study Context and Customer Sample

### 3.3 Measures

Measures for all constructs were derived from scales of studies in the literature. In order to achieve a better fit, some scales were adapted to the context of peer-to-peer CC. All items were formatted into a seven-point (“strongly disagree–strongly agree”) Likert-type response scale. **Table 3** provides an overview of all measures of constructs and their sources. Measures of control variables can be found in **Appendix 2**.

For customer-to-customer interactions, the scale of Moore et al. (2005) was adapted. It was originally applied in the context of hair salons where customers interact physically. Due to the sample consisting of customer of peer-to-peer CC ventures with face-to-face interactions, the scale is assumed to be a good fit. For brand community identification and co-production intention, the scales of Schaefers et al. (2016) were adapted and are considered to be suitable, since they were developed in a CC context. For continuance intention, the scale provided by Bhattacharjee (2001) was picked and adapted to the CC context.

In order to mitigate the effect of other confounding variables, it is controlled for perceived social norms, the frequency of renting and renting out, the sector of the peer-to-peer CC venture, and demographics. First, perceived social norms are an alternative explanation of the effect. Customers may co-produce service outcomes not only because of communal identification but also due to norms they experience during the service. For example, in peer-to-peer car sharing, customers form an impression on general car cleanliness on basis of their previous experience (Schaefers et al., 2016). Another study found normative group pressure in brand communities influencing behavioural intentions as well (Algesheimer et al., 2005). Intuitively, this is apparent, since group pressure might emerge on basis of social norms. For measuring perceived social norms,

the scale of Schaefer et al. (2016) was adapted. Second, besides norms, it is controlled for the users' frequency of renting and renting out within the CC service. Users of peer-to-peer CC services can either benefit from renting or from renting out products or services. Therefore, results have to be robust independent on the user's tendency towards borrowing or lending. Third, controlling for the sector (cars or accommodation) allows a differentiated view on the results and may reveal interesting insights among sectors. Finally, basic demographic data may have an influence on the investigated effect as well. Therefore, it is controlled for age, education, and gender.

The surveys were designed as congruent as possible for customers of each venture type. For customer-to-customer interactions, brand community identification, and continuance intention, item questions differed only by the company names. Since co-production opportunities are highly dependent on the underlying collaboratively consumed good, items for co-production intention and perceived social norms differ by the venture type.

<b>Constructs and Measures</b>	<b>Source</b>
<b>Customer-to-customer interactions (3 items)</b> 1. I enjoy spending time with other customers at [service provider]. 2. The other customers at [service provider] make my time there more enjoyable. 3. There is a good chance I will run into one of my friends at [service provider].	Adapted from Moore et al. (2005)
<b>Brand community identification (4 items)</b> 1. I really identify with other people who use [service provider]. 2. I really feel like I almost belong to a club with other [service provider] users. 3. [Service provider] is used by people like me. 4. I feel a deep connection with others who use [service provider].	Adapted from Schaefer et al. (2016)
<b>Car sharing co-production intention (5 items)</b> 1. I would clean the car before returning it, even if I made it dirty. 2. I would notify the owner about a scratch I made in the car. 3. I would remove my trash in the car. 4. I would notify the owner if I slightly damaged the side mirror. 5. I would treat the car in a way that others find acceptable.	Adapted from Schaefer et al. (2016)
<b>Accommodation sharing co-production intention (5 items)</b> 1. I would clean the apartment before returning it, especially if I made it dirty. 2. I would notify the owner about a scratch I made in the mirror. 3. I would remove my trash in the apartment. 4. I would notify the owner if I slightly damaged the TV. 5. I would treat the apartment in a way that others find acceptable.	Adapted from Schaefer et al. (2016)
<b>Continuance Intention (3 items)</b> 1. I want to continue using [service provider] rather than discontinue its use. 2. My intentions are to continue using [service provider] rather than any alternative means. 3. If I could, I would like to discontinue use of [service provider]. (Inverse)	Adapted from Bhattacharjee (2001)

**Table 3: Scale Constructs and Measures**

### 3.4 Analytical Strategy

Data is collected with the online survey tool Qualtrics and then imported into the statistical analysis tool SPSS 21. Then, constructs are examined with descriptive statistics and univariate analyses. Subsequently, in order to investigate relationships between constructs, bivariate analyses are conducted. Finally, analyses end with multivariate statistics in form of a multiple regression analysis. In doing so, the procedure for second stage moderation models is applied (Edwards & Lambert, 2007). **Table 4** sums up all hypotheses and their regression equations.

Hypothesis	Variables Included	Regression Equation
<b>Hypothesis 1</b> Customer-to-customer interactions positively relate to co-production intention.	<b>IV:</b> Customer-to-customer interactions <b>DV:</b> Co-production intention	$Y_{CPI} = \beta_0 + \beta_1 x_{CCI} + \beta_2 x_c + \varepsilon$
<b>Hypothesis 2</b> Customer-to-customer interactions positively relate to brand community identification.	<b>IV:</b> Customer-to-customer interactions <b>DV:</b> Brand community identification	$Y_{BCI} = \beta_0 + \beta_1 x_{CCI} + \beta_2 x_c + \varepsilon$
<b>Hypothesis 3</b> Brand community identification positively relates to co-production intention.	<b>IV:</b> Brand community identification <b>DV:</b> Co-production intention	$Y_{CPI} = \beta_0 + \beta_1 x_{BCI} + \beta_2 x_c + \varepsilon$
<b>Hypothesis 4</b> Continuance intention positively moderates the effect of brand community identification on co-production intention.	<b>IV:</b> Brand community identification <b>DV:</b> Co-production intention <b>MV:</b> Continuance intention	$Y_{CPI} = \beta_0 + \beta_1 x_{BCI} + \beta_2 x_{CI} + \beta_3 x_{CI \times BCI} + \beta_4 x_c + \varepsilon$

<sup>a</sup> Control variables are summarised in  $x_c$  and include demographical variables (age, education, gender) and CC-related variables (frequency of renting accommodation/cars, frequency of renting out accommodation/cars, perceived social norms).

**Table 4:** *Hypotheses and Regression Equations*

### 3.5 Chapter Summary

Through developing the methodical approach of the study the current chapter lays the foundation for the upcoming analysis presented in chapter 4. In particular, an elaboration of the data collection and sampling process, measurements of the constructs and the context the study takes place in is needed in order to understand the results and their implications. The next chapter presents the results of the procedure outlined in chapter 3.4.

## 4 Results

After having elaborated the methodical procedure, this chapter presents results of statistical analyses conducted with the collected data. Chapter 4.1 contains preliminary analyses of the sample. In chapter 4.2, internal consistency of constructs is verified. Then, chapter 4.3 presents non-parametric and parametric analyses which provide insights about validity of assumptions for regression analysis and the extent to which results hold with regards to control variables. Fourth, in chapter 4.4 hypotheses are tested by conducting a linear multiple regression analysis. Finally, this chapter closes with a brief summary of findings.

### 4.1 Preliminary Analysis of the Sample

#### 4.1.1 Distribution of Customers Among Ventures

Of all 272 complete responses, 46 participants indicated not to be customers of the target ventures and 7 answers were not complete. Therefore, data from 219 respondents contains information relevant for the study. However, results reveal that target ventures were not distributed equally among all respondents. In particular, 95 per cent of all valid answers stem from customers of Airbnb, 1.4 per cent from customers of Drivy, 2.3 per cent from customers of SnappCar, and 1.4 per cent from customers of Wimdu. This result is most importantly caused by the reason that among the target ventures, Airbnb is by far the most prominent company – having listed over two million accommodations worldwide (Airbnb, 2015). Since responses were mainly generated through distribution of the survey in Facebook groups which do not only contain customers of the ventures, the probability that customers of Airbnb participate is much higher than for all other ventures. Therefore, in order to not decrease the overall validity through small sample sizes of subgroups, it was decided to only use responses of customers of Airbnb and solely concentrate on peer-to-peer accommodation sharing. Applying this criterion to all 226 responses eliminates 16 of them, leading to a final sample size of 208 Airbnb customers.

#### 4.1.2 Demographic Nature of the Sample

**Appendix 3, Figure 2** provides an overview of the demographic nature of the sample. Out of the 208 survey respondents, 51 per cent are female and 49 per cent are male. 45 per cent of the respondents is 25 or younger, whereas 48 per cent is between 26 and 34 years old. 6 per cent are between 34 and 54 years old and only one per cent is between 55 and 64 years old. The mean age is 27 years. Concerning education, respondents having a bachelor's degree depict the biggest share (38 per cent), followed by master's degree (29 per cent) and high school (20 per cent). Other

educational levels such as “less than high school”, “doctoral degree”, and “others” make up only 13 per cent.

## 4.2 Internal Consistency

Using Cronbach’s Alpha allows for testing internal consistency of constructs through assessment of intercorrelations between test items. Since all items of variables were adapted from the literature, it was decided to delete single items only if internal consistency was below 0.7 and a deletion leads to a major improvement. Except for co-production intention, all constructs reached at least acceptable results higher than 0.7. **Table 5** provides an overview of the results. For co-production intention in particular, deleting the last item “I would treat the car/apartment in a way that others find acceptable” would increase internal consistency by .01 from 0.68 to 0.69. Retaining the variable in its original measure was considered to outweigh this improvement. Therefore, no item was deleted (compare **Appendix 3, Table 9**).

Variable	Cronbach's Alpha
Customer-to-Customer Interactions	.72
Brand Community Identification	.73
Continuance Intention	.75
Co-Production Intention	.68

**Table 5:** *Internal Consistency*

Satisfying internal consistency can be supported by looking at means of single items. Only for brand community identification, means differ strongly. Item 1 and item 3 have a mean of 4.28 and 5.15 retrospectively, whereas item 2 and 4 have a mean of 2.69 and 2.60 retrospectively. This can be explained through the nature of the item questions. While item 1 and item 3 ask for general identification and overlap of identities between the participant and the specific group, item 2 and item 4 are much more extreme: Asking participants if they feel to belong to a club with other users (item 2) and asking them if they are deeply connected to other users (item 4) goes beyond general identification. Therefore, means of items were expected to differ.

## 4.3 Non-Parametric and Parametric Analysis

In this subchapter, assumptions for multiple regression are tested through non-parametric and parametric tests. In order to be able to conduct a linear regression analysis, four assumptions have to be met (Osborne & Waters, 2002): First, variables have to be measured without error. Second, data has to be normally distributed. Third, variances of residuals have to be constant (homoscedasticity). Finally, the relationship between independent and dependent variables has to

be linear. Since reliability of variables has already been tested in chapter 4.2 and measurement errors can be mitigated through adaption of constructs from the literature, in the following only assumptions 2-4 are tested for the data retrieved. Additionally, most of the conducted tests assume independence of observations. Therefore, this assumption is elaborated in the beginning of this subchapter.

#### **4.3.1 Independence of Observations**

Several actions were taken in order to mitigate selection bias. Most importantly, avoiding snowball sampling and its negative consequences, messages were forwarded to recipients personally or by distributing it in Facebook groups of large sizes. Moreover, as respondents were asked in the beginning of the survey to decide for one venture they are customer of, the probability of having received results of the same respondent for different ventures is low. The major incentive of participating multiple times is probably increasing the chance in the raffle. Therefore, having registered no duplicates in email addresses of respondents can be seen as another indicator of independence of observations.

#### **4.3.2 Normality of Data**

Normality of data is tested by using the Kolmogorov-Smirnov (K-S) test. If results for one variable are significant, the test suggests to reject  $H_0$  (hypothesizing data is normally distributed). Conducting the K-S test leads to significant results for all tested variables (compare **Appendix 3, Table 10**). Since the K-S test is more sensitive for deviations from normal distributions with bigger sample sizes, taking a closer look at histograms provides a clearer picture of the distribution, showing graphically nearly normally distributed plots especially for customer-to-customer interactions and brand community identification and the control variable perceived social norms. Continuance intention and co-production intention graphically display a negative skew (compare **Figure 3**). Altogether, the assumption of normality of data is violated statistically. As some variables appear to be graphically normally distributed and since the K-S test is more sensitive with bigger sample sizes, it is believed that violating the assumption outweighs the benefits of results gained. Moreover, normality will be assessed post-hoc in chapter 4.5 after conducting the multiple regression analysis.

#### **4.3.3 Differences Among Groups and Homoscedasticity**

Grouping respondents and controlling for differences may reveal interesting insights. First, respondents were grouped concerning control variables. The Mann-Whitney U test was conducted when respondents could be split into two independent groups, whereas the Kruskal-Wallis test for two or more independent groups was conducted. In particular, differences in gender were tested

with the Mann-Whitney U test and differences in age, education, frequency of renting, frequency of renting out, and perceived social norms were tested using the Kruskal-Wallis test. Afterwards, testing parametrically with one-way ANOVA and Turkey HSD, groups which differ are specified. Finally, equality of variances is tested with Levene's test.

**Appendix 3, Tables 11 and 12** summarise the results. Significant differences are detected for each grouping variable for at least one of the dependent variables. Homogeneity of variance in general is only violated for three grouping variables (frequency of renting, frequency of renting out, and perceived social norms) and in each case for one variable only. Two findings are considered to be most interesting for further analysis. First, for gender, the Mann-Whitney U test reveals significant differences of mean ranks in co-production intention between men and women ( $U = 110$ ,  $p = .01$ ). Further testing with one-way ANOVA and Levene's test reveals no significantly differing variances of men and women in co-production intention ( $p = .01$ ). Second, for the frequency of renting out accommodation, the Kruskal-Wallis test finds differences in customer-to-customer interactions ( $X^2 = 9.66$ ,  $p = .05$ ) and brand community identification ( $X^2 = 9.58$ ,  $p = .05$ ) to be significant. For both, homoscedasticity is not violated. Groups differ mainly between never renting out any accommodation ( $N=159$ ) and renting out accommodation monthly ( $N=41$ ). Comparing these groups with the Mann-Whitney U test leads to non-significant results for customer-to-customer interactions and brand community identification. Altogether, when interpreting results, differences in co-production intention by gender should be heard in mind, whereas differences in frequency of renting out are not considered to be significant.

#### 4.3.4 Linearity

Linearity between variables has been tested in two ways. First, in **Appendix 3, Figure 4** scatterplots are displayed. Correlations are mainly visible for brand community identification and customer-to-customer interactions, continuance intention and customer-to-customer interactions, and continuance intention and brand community identification. For co-production intention and other variables, scatterplots are more dispersed. Second, correlational coefficients between variables are listed in **Table 6** which confirm the graphical impression. Both parametric and non-parametric correlation coefficients show significant p-values for correlations between customer-to-customer interactions, brand community identification, and continuance intention, whereas co-production intention does not correlate with one of the three other variables significantly. The highest correlation is between customer-to-customer interactions and brand community identification (Pearson correlation coefficient = .49; Spearman's rho = .47). Notably, for co-production intention

and brand community identification, the correlation is even slightly negative – contrary to the hypothesized positive relationship.

		Customer-to-Customer Interactions	Brand Community Identification	Continuance Intention	Co-Production Intention
<b>Customer-to-Customer Interactions</b>	Pearson Corr.	1			
	Spearman's rho	1			
<b>Brand Community Identification</b>	Pearson Corr.	.49***	1		
	Spearman's rho	.47***	1		
<b>Continuance Intention</b>	Pearson Corr.	.23***	.27***	1	
	Spearman's rho	.26***	.23***	1	
<b>Co-Production Intention</b>	Pearson Corr.	.08	-.08	.01	1
	Spearman's rho	.11	-.03	.06	1

\*\* Correlation is significant at the 0.05 level (2-tailed). \*\*\* Correlation is significant at the 0.01 level (2-tailed).

**Table 6: Correlations**

In the next subchapter, the data will be analysed using multivariate techniques. In particular, hypotheses will be tested with a multiple linear regression analysis. As the assumptions normality of data and linearity are only confirmed partly, conclusions drawn from the regression analysis may be subject to restrictions.

#### 4.4 Multiple Linear Regression

In this chapter, hypotheses are tested using multiple linear regression analysis. Linear regression can be used to assess if a set of path-specific null hypotheses can be rejected (Gefen, D., Straub, D., & Boudreau, M. C., 2000). Plugging in the corresponding equation for each hypothesis (**Table 4**) leads to different regression outputs. After testing hypotheses stepwise by these different regression models, one integrated model is presented (compare **Table 7** for all regression findings).

##### 4.4.1 Customer-to-Customer Interactions and Co-Production Intention

Model 1 in **Table 7** shows significant effects of the control variables gender and perceived social norms at the five percent level. Being female increases co-production intention ( $\beta = .17$ ) and higher perceived social norms do as well ( $\beta = .35$ ). Other control variables did not contribute significantly to explain co-production intention. Hypothesis 1 argues that customer-to-customer interactions positively relate to co-production intention. When adding customer-to-customer interactions as an independent variable in model 2, no significant improvement is demonstrated. Rather, adjusted  $R^2$  decreases from .15 in model 1 to .14 in model 2.

Variable	Model 1 (DV: CPI)	Model 2 (DV: CPI)	Model 3 (DV: BCI)	Model 4 (DV: CPI)	Model 5 (DV: CPI)	Model 6 <sup>b</sup> (DV: CPI)
Constant	3.96	3.97	1.63	4.21	4.29	4.28
Customer-to-Customer Interactions		-.01	.49**			.08
Brand Community Identification				-.15**	-.13*	-.17**
Continuance Intention					-.03	-.04
Brand Community Identification x Continuance Intention					-.05	-.05
Age	.03	.03	.05	.02	.02	.03
Gender	.17**	.17**	-.01	.18**	.18**	.17**
Education	.02	.02	.07	.03	.03	.03
Frequency of Renting	.02	.02	-.03	.03	.03	.02
Frequency of Renting Out	.10	.10	.13**	.13*	.14**	.13*
Perceived Social Norms	.35**	.35**	.04	.37**	.37**	.36**
Sample Size	208	208	208	208	208	208
F	6.91**	5.90**	10.25**	6.75**	5.29**	4.88**
R <sup>2</sup>	.17	.17	.26	.19	.19	.20
Adjusted R <sup>2</sup>	.15	.14	.24	.16	.16	.16

\* Correlation is significant at the 0.1 level. \*\* Correlation is significant at the 0.05 level.

<sup>a</sup> All coefficients besides the intercept are expressed as standardized coefficients.

<sup>b</sup> Regression equation for model 6:  $Y_{CPI} = \beta_0 + \beta_1 x_{CCI} + \beta_2 x_{BCI} + \beta_3 x_{CI} + \beta_4 x_{CI \times BCI} + \beta_5 x_c + \varepsilon$

**Table 7: Regression Findings**

#### 4.4.2 Customer-to-Customer Interactions and Brand Community Identification

For Model 3 in **Table 7**, the effect of customer-to-customer interactions on brand community identification was tested. The only control variable which contributed significantly was the frequency of renting out accommodation ( $p < .05$ ,  $\beta = .13$ ). Hypothesis 2 states that customer-to-customer interactions positively relate to brand community identification. Model 3 shows significant findings for this effect on the five percent level. In particular, when customer-to-customer interactions increase by one on the Likert scale, brand community identification increases by .49. Moreover, among all models tested, model 3 has the highest explanatory power (adjusted  $R^2 = .24$ ).

#### 4.4.3 Brand Community Identification and Co-Production Intention

Model 4 in **Table 7** tests the effect of brand community identification on co-production intention. For the control variables, gender ( $\beta = .18$ ) and perceived social norms ( $\beta = .37$ ) have a significant effect on the five percent level, whereas the frequency of renting out accommodation ( $\beta = .13$ ) is significant on the ten percent level. Hypothesis 3 claims that brand community identification positively relates to co-production intention. Despite significant findings, it is not supported by model 4 as the effect found is negative ( $p < .05$ ,  $\beta = -.15$ ). Adjusted  $R^2$  is .16.

#### 4.4.4 Continuance Intention

In model 5 (**Table 7**), the second stage moderation effect of continuance intention is tested. Again, gender ( $\beta = .18$ ), perceived social norms ( $\beta = .37$ ), and the frequency of renting out accommodation ( $\beta = .14$ ) prove significant contribution, but this time all of them are significant on the five percent level. Hypothesis 4 states that continuance intention positively moderates the effect of brand community identification on co-production intention. Brand community identification is significant on the ten percent level ( $\beta = -.13$ ). However, again, the hypothesized positive effect of brand community identification as well as the moderating role of continuance intention are found to be negative. In comparison to model 4, model 5 shows a similar fit with an adjusted  $R^2$  of .16.

#### 4.4.5 Integrated Model

Model 6 in **Table 7** provides an integrated model incorporating all hypothesized relationships. As in model 4, the control variables, gender ( $\beta = .17$ ) and perceived social norms ( $\beta = .36$ ) have a significant effect on the five percent level, whereas the frequency of renting out accommodation ( $\beta = .13$ ) is significant on the ten percent level. From the main variables considered, only brand community identification is significant ( $p < .05$ ) but as in model 5 and contrary to the hypothesis, the relationship is negative ( $\beta = .17$ ). Interestingly, in comparison to model 5, by incorporating customer-to-customer interactions the explanatory power stays the same (adjusted  $R^2 = .16$ ).

### 4.5 Post-Hoc Tests

When testing normality of data in chapter 4.3.2, the assumption was violated. Therefore, distribution of residuals is tested post-hoc. **Appendix 3, Figure 5** contains histograms and P-P plots of the tested models. All models show histograms which suggest a normal distribution. Moreover, the observed distribution of the models in P-P plots can be considered approximate to the predicted distribution in the regression analysis. Certainly, normal distribution of data as an assumption of multiple linear regression analysis was violated a priori and should be stated as a limitation of the study. However, results from analyses of regression residuals support the assumption post-hoc, mitigating the limitation and supporting the legitimacy of using multiple linear regression techniques.

### 4.6 Chapter Summary

Data was examined with univariate, bivariate, and multivariate analyses. In the preliminary analysis, peer-to-peer car sharing was excluded from the sample due to a low response rate. Analysing the data using univariate and bivariate techniques, internal consistency of constructs

shows at least acceptable levels of reliability. Moreover, the assumptions of normality of data and linearity are violated. However, post-hoc analyses of normality reveal more promising results. Grouping responses with control variables shows significant differences for every control variable, whereas for three of them homoscedasticity was violated for at least one variable each. Co-production intention was found to differ significantly by gender. In multivariate analysis, regression results support hypothesis 2, whereas hypotheses 1, 3, and 4 are not supported due to differing reasons: For hypotheses 1, findings were not significant. For hypotheses 3 and 4, despite significant findings, the hypothesized positive relationship was negative in the regression. The next chapter discusses the results and elaborates the article's implications, limitations, as well as suggestions for further research.

<b>Hypothesis</b>	<b>Result</b>
<b>Hypothesis 1</b> Customer-to-customer interactions positively relate to co-production intention.	<b>Rejected</b>
<b>Hypothesis 2</b> Customer-to-customer interactions positively relate to brand community identification.	<b>Supported</b>
<b>Hypothesis 3</b> Brand community identification positively relates to co-production intention.	<b>Rejected</b>
<b>Hypothesis 4</b> Continuance intention positively moderates the effect of customer-to-customer interactions on community identification.	<b>Rejected</b>

**Table 8:** *Hypotheses Testing Results*

## 5 Discussion

This chapter discusses the findings from chapter 4. First, chapter 5.1 outlines implications of the study's findings in the context of the research questions stated in chapter 1.5. Then, theoretical and managerial implications of the study are highlighted (chapter 5.2). Chapter 5.3 presents the study's limitations and further possible research areas. Finally, this chapter closes with a brief conclusion (chapter 5.4).

### 5.1 General Discussion

With regard to the findings of the regression analysis in the previous chapter, some findings are in line with previous research while some are not. As the research in CC is in an early state, this is not surprising since frameworks allowing for strictly distinguishing ventures are missing, little quantitative research has been conducted, and measurement of constructs deviate from study to study. Even though these factors mitigate the comparability of the literature on CC, this study leads to some interesting findings which are discussed in the following. Coming back to the research question, it was the purpose of this study to investigate if customer-to-customer interactions in peer-to-peer CC influence customers' perceived belonging to a brand community and subsequently the intention to co-produce service outcomes. Therefore, the following subchapters are organised by the research questions' subquestions.

For the relationship between customer-to-customer interactions and co-production intention, no significant effect was found in the regression analysis. This is especially interesting when taking into account the focus of this study on peer-to-peer CC only. While the literature shows evidence for low co-production intention in CC (Bardhi & Eckhardt, 2012; Catulli et al., 2013), in the context of peer-to-peer CC co-production intention seems to be higher (Philip et al., 2015). Furthermore, anonymity was found to mitigate the co-production intention (Schaefers et al., 2016). Indeed, this study reveals a high degree of co-production intention. Although there were good reasons to believe customer-to-customer interactions to cause this difference in peer-to-peer CC, it can be concluded that this is not the case.

For the relationship between customer-to-customer interactions and brand community identification, a significant effect was found. This is in line with social exchange theory, suggesting that high quality interactions between customers produce socioemotional value. As brand community identification in peer-to-peer CC was found to be higher than in company-owned CC, unravelling the antecedents of this relationship helps to further categorise CC venture types and their consequences for consumers.

For the relationship between brand community identification and co-production intention, a significant effect was found. However, contrary to the underlying hypothesis, the effect was negative in the regression results. Hamari et al. (2015) highlight that evolving and scaling business models in the sharing economy might lead to a shift from intrinsic to extrinsic motivation of consumers to participate in CC. The sample of the study was solely drawn from customers of Airbnb. As this company is rather mature and well-known, according to the idea of Hamari et al. (2015), the positive relationship between brand community identification and co-production intention might only hold for customers in smaller ventures. Supporting this argument, Philip et al. (2015) who pronounce their self in favour of a positive relationship mainly interviewed customers of smaller ventures. Additionally, the mean of co-production intention is considerably higher than the mean of brand community identification and could be indicating a bias in the construct co-production intention. As the item was adapted to the context of accommodation sharing, either the changed venture type or the changed focus on peer-to-peer CC only could have caused this high mean. Another possible explanation for this high degree of co-production intention could be the above-than-average effect (Alicke, Klotz, Breitenbecher, Yurak, & Vredenburg, 1995), meaning people assess themselves and their actions more favourably than they assess others.

The role of continuance intention moderating the effect of brand community identification on co-production intention was not supported by the regression analysis. Arguing from a social exchange theory perspective, customers were thought to anticipate future value derived from using the service and align their future actions according to that. Therefore, for customers with high continuance intention, communal identification was assumed to lead to higher co-production intention. As argued before, bearing in mind the well-established business model of Airbnb, customers in the study could be more extrinsically motivated and therefore continuance intention is less strongly connected to communal identification.

Finally, controlling for six different variables leads to interesting insights but in most cases post hoc testing with the Turkey HSD test revealed no significant mean differences among all subgroups. Most interestingly, females rated their co-production intention higher than males did.

## **5.2 Theoretical and Managerial Implications**

This thesis contributes to the academic discussion in several ways. First, as the research in CC is in an early state, this study mainly enhances the understanding of an important subcategory of CC, namely peer-to-peer CC. By focusing on customers of this specific type of CC, this article aims at unravelling distinct results of scholars on the degree of communal identification of customers in

CC and their willingness to co-create service outcomes. Second, by finding customer-to-customer interactions in peer-to-peer CC to be an antecedent of brand community identification, a new link is established in the context of peer-to-peer CC. As customer-to-customer interactions are not part of company-owned CC by nature, there is good reason to believe this to explain differences in communal identification between both CC types. Finally, means in co-production intention were found to differ significantly by gender. Drawing attention to this difference may contribute to further distinction of results in the field of CC.

For managers of CC ventures or those who consider entering the CC sector, this study reveals interesting insights as well. First and foremost, findings of this study suggest that brand community identification can be fostered through meaningful interactions among customers. Brand communities lead to several positive consequences stated in the literature such as increased perceived quality, brand loyalty, brand awareness, brand association (Muniz & O'Guinn, 2001). As brand communities created by marketers lead to less community engagement than customer-created brand communities, literature on brand communities recommend marketers to keep to the sidelines and give customers space in brand communities (Algesheimer, Dholakia, & Herrmann, 2005; Lee, Kim, & Kim, 2011). Therefore, by fostering customer-to-customer interactions in peer-to-peer CC, managers can increase the communal identification of their customers without interrupting and massively investing in community building events. Second, admittedly, co-production intention was not found to be positively related to brand community identification. Therefore, managers should not rely on reducing monitoring costs solely through their business model choice since this study does not provide the reliable insights needed.

### **5.3 Limitations and Outlook**

This study has several limitations which will be highlighted in the following. First, every research design brings along disadvantages as well. This study's cross-sectional design allows neither for detecting cause and effect certainly, nor does it take into account different the time dimension to ensure the representativeness of the snapshot taken (Mann, 2003). Second, due to voluntary participation of recipients, non-response bias may be present although several actions were taken to reduce it. Third, resulting from the decision to use a web-based survey design, non-presence of a trained interviewer and the missing opportunity to clarify the questions are a limitation as well. Fourth, although this study aimed at seeking responses from customers in peer-to-peer car- and accommodation sharing, only the latter could be included in the sample. Fifth, the hypothesized positive relationship between brand community identification and co-production intention was

found to be negative. As this is not supported by the literature, it may indicate either biased measures or other variables interfering the relationship. This is underscored by the high means of co-production intention and continuance intention since both constructs were differently distributed in the studies they were adapted from. A sixth limitation is caused by the decision to measure behavioural intentions. As no actual behaviour was measured, it is not guaranteed that all intentions are translated into real actions. Evidence of Hamari et al. (2015) partially supports this concern. Finally, several statistical results lead to the conclusion that results from this study have to be interpreted with caution. Normality, homoscedasticity, and linearity are partially violated, although post-hoc tests mitigate this concern at least for normality. Moreover, although not uncommon in social science, the fit of the regression model is quite low.

Bearing in mind the study's scope and limitations leads to several implications for further research. First, future studies should integrate other variables in order to unravel peer-to-peer CC and its implications for consumers, aiming at a higher fit of the model. Second, similar research should be conducted in other categories of peer-to-peer CC, preferably with customers of both ventures in the fledgling stage and rather mature ones. In doing so, in line with the suggestion of Hamari et al. (2015), scholars could aim at finding out to which extent communal, hedonic or utilitarian motivation of customers differs by the category of peer-to-peer CC. Third, using actual co-production data from companies could shed light on the gap between behavioural intentions and real actions. Fourth, future research could concentrate on the direction of influence between CC business model and customer behaviour as it is unclear if different types of CC attract different customers or if those distinct business models have implications for customers. Finally, as this study found customer-to-customer interactions to be positively related to brand community identification, this relationship may not be limited to peer-to-peer CC only. Therefore, testing the relationship in different contexts may be valuable for other research areas as well.

#### **5.4 Conclusion**

This study intended to clarify factors relating to co-production intention in peer-to-peer CC. In particular, it tested a unique characteristic, customer-to-customer interactions, to determine co-production intention with brand community identification mediating this relationship. Moreover, continuance intention of customers towards the service was hypothesized to be a second stage moderator. Findings support the relationship between customer-to-customer interactions and brand community identification. Although no support is found for other hypotheses, results reveal interesting additional insights and contribute to both academic and managerial discussion.